QZX

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* EDITOR'S NOTES K5XY
* QZX FRIENDS
* UNCLASSIFIED ADS
* ZX81 RAM EXTENSION K5XY
* ZX81 RAMTEST

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EDITOR'S NOTES

K5XY

These computers always have a surprise for you. Or at least the programs do. I thought the last QZX was all fixed up with templates so that all I had to do was add the articles. Well when it printed out the headers and footers were missing. I still have not the foggiest notion of where they went. Fortunately it was relatively easy to put them back in.

Still there were at least two errors in the issue. I would offer a prize for the first postcard listing the errors except it would be a waste of a 19 cent stamp. (An extra space before a comma in the first paragraph, "but" instead of "by", and a lack of hyphenation created a few rather large spaces in some sentences.)

I was really pleased with the renewal rate for June. Most of the expiring subscriptions were renewed. It is interesting to note that the majority of renewals came from non amateurs.

Part of that phenomenon is, I think, due to the fact that QZX is one of the few magazines left which publishes technical information about the ZX81 series of Sinclair computers.

The only major computerfest with a strong Sinclair component will be held this year August 29 and 30 at Hara Arena in Dayton, Ohio. It will be sponsored by the Dayton Microcomputer Association. More information can be obtained from Gary M. Ganger, 812 Hedwick Street, New Carlisle, OH 45344-2619. They expect about 15000 people to attend, and many of the remaining active Sinclair vendors will be there.

I have started on a real index for QZX. If any of you have suggestions for subject headings, drop me a card.

KF5GG, George, spotted the fact that the last issue was mailed from Oregon. The reason for this unusual mailing location was that I took a trip to the northwest just after that issue came from the printer's. Unfortunately I was not able to visit RMG Enterprises, a QZX advertiser and one of the largest suppliers of Sinclair computer material.

QZX FRIENDS

KF5GG - George renewed and sent a contribution to the postage fund.

KH6AFM - Raymond renewed and sent a contribution to the postage fund.

James Powell renewed and sent a contribution to the postage fund.

Arnold Nieuwenhoff renewed and did not sent a contribution to the postage fund. He sent something just as good, a book of stamps. They have been used to send out this month's issue.

UNCLASSIFIED ADS

WANTED: UNCLASSIFIED ADS for publication in QZX. Cost is 1 cent for each keystroke (characters, blanks, etc.). Payment must be included with order. This is an excellent way to sell your program or unwanted equipment, ask for help, or find a specific program. Send your ad with payment to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

QZX discount: 15% discount on all orders mentioning QZX. T & C Services (address in ad in this issue.)

FREE: One Byte-Back M 16 16 K RAM (no printed circuit board on the feed through socket). Contributed by KA8THG. It would be appreciated if a contribution toward the mailing expenses were made. Send requests to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: Back issues of QZX, $1.00 each postpaid. QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: CP/M books. Almost new. Half original price. *The Programmer's CP/M Handbook* by Andy Johnson-Laird. Osborne. Hardback. 500 pages $419. *The Byte Guide to CP/M* by Mark Dahmke. Mc Graw Hill. 250 pages. $8.50. *CP/M Users Guide* by Thom Hogan. Osborne. 330 pages. $8.95. *The CP/M Plus Handbook* by Alan R. Miller. Sybex. 250 pages. $7.5. *Inside CP/M Plus* by David E. Cortesi. Holt-Rinehart. 260 pages. $9.25. *CP/M Bible* by Waite and Angermeyer. Howard Sams. 430 pages. $9.90. *Users Guide to CP/M Systems* by Bove and Rhodes. Baen. 300 pages. $4.50. $1.00 each shipping and handling. A. F. Burr, 2025 O'Donnell, Las Cruces, NM 88001.

ZX81 RAM EXTENSION

K5XY

I am not too sure why anybody would want to use this circuit to extend their RAM when QZX has been offering a free 16 K RAM box for several months now, but the circuit on the following page can be used to add just the amount of RAM that you wish and it is quite easy to build.

This circuit is for a board which will plug into the ZX81's rear connector, adding up to 4 K of RAM to the existing amount.

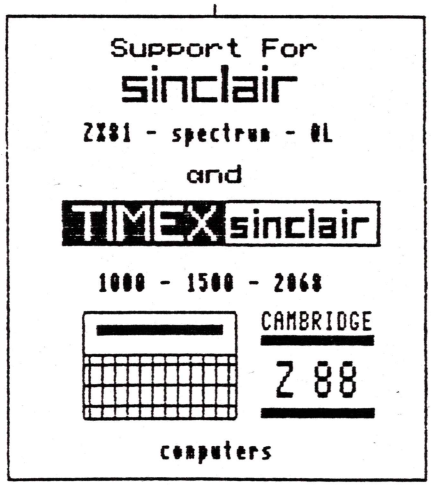
For 1 K add IC's 1,2, and 9.

For 2 K also add IC's 3 and 4.

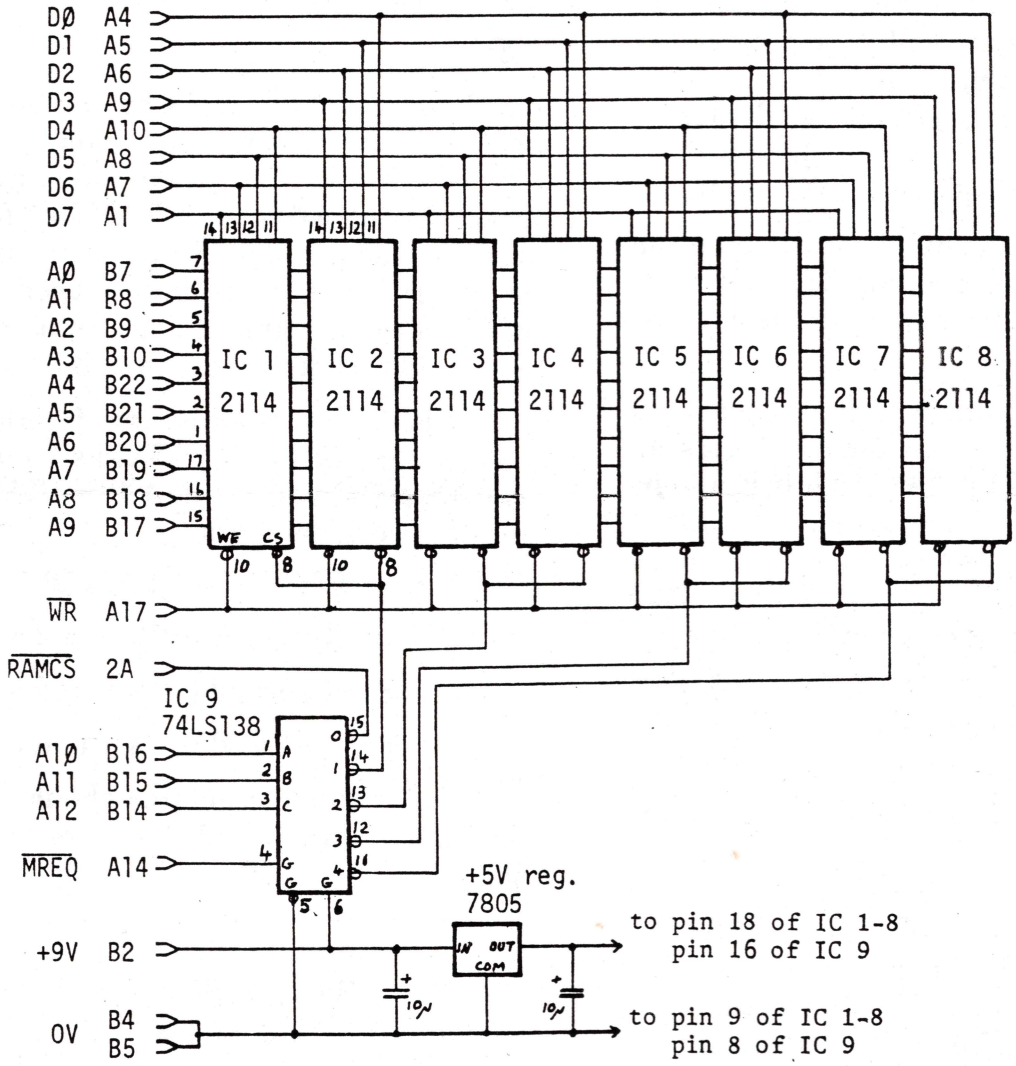
For 3 K also add IC's 5 and 6.

For 4 K also add IC's 7 and 8.

The 7805 5V regulator should be mounted on a 5 cm (2 ") square heat sink.



1-4 K RAM Extension



ZX81 RAMTEST

The short program at the end of this article can be used to test the RAM of you ZX81 type Sinclair computer. It does a quite thorough check of all the RAM installed in your system except for that being used by the program. Of course if the program is running correctly that by itself is a check for that part of your RAM.

It does the checking by POKEing random numbers into all of the locations to be tested and them PEEKing to see if they are all still correct. Having gone through the memory once in ;this fashion, it repeats the test with a different set of random numbers. There are some types of faults that theoretically the program will not detect, but they are very rare.

As listed, the program will run forever or until it finds an error, whichever is the sooner. If you omit line 14 then it will only make one pass, taking between 30 seconds (1 K RAM) and 12 minutes (16 K RAM).

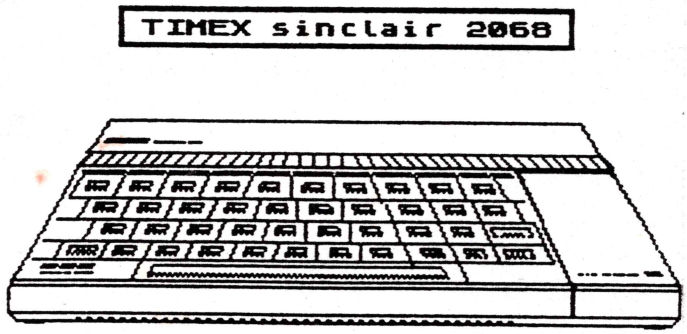
The listing below is for a ZX81 with 1 K of RAM. Add 1024 to the second value (17351) in lines 7 and 11 for each additional 1 K of RAM which you wished checked. Also, the first value (16762) in lines 7 and 11 must be changed to 17530 if you have more than 3 1/2 K of RAM total. Thus if you have 16 K, lines 7 and 11 must read

FOR C=VAL "17530" to val "32711"

The program itself is in the following 14 lines.

```
1 FAST
2 CLS
3 LET A = VAL "256"
4 rand
5 LET b = A*RND
6 RAND B
7 FOR C  = VAL "16762" TO VAL "17351"
8 POKE C, INT(A*RND)
9 NEXT C
10 RAND B
11 FOR C  = VAL "16762" TO VAL "17351"
12 IF PEEK C <> INT(A*RND) THEN STOP
13 NEXT C
14 RUN
```

Instead of just stopping in line 12, you might want to have the program print out an announcement that it had found an error. You could even have it print out the location of the error. These additions are left as an exercise for the reader.



73, K5XY

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